Weather Challenges for UAM
NCAR Research & Priorities

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NASA Community Integration Working Group
Focus on UAM Weather
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NCAR Aviation Applications Program
• Four decades of experience addressing aviation weather-related problems
• Basic research to understand & predict weather phenomena
• Applied research & development to mitigate avoidable weather impacts

Emerging Modes of Air Transportation
• Unmanned aerial systems & urban air mobility
• Particular weather challenges related to low-level atmospheric processes - complex terrain, urban landscapes, thunderstorms, etc.
Urban Environments

- New aviation weather hazards emerging in urban landscapes
  - wind & turbulence around buildings
  - “hazardous” depends on aerial vehicle, performance, & mission

- Cityscapes are unique

- Weather & climate vary by location
  - depend on latitude, proximity to oceans, mountains, etc.

- Weather hazards are highly variable
  - depend on time of day & season
  - vary with wind speed & direction, height above ground, etc.

Daily wind at 26 m for January at noon in Dallas, TX